# PK03008_PGC2KL_SSBG256

## （版本号：Version1.2）

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深圳市紫光同创电子有限公司

# 文档版本修订记录

| 版本号 | 发布日期 | 修订记录 |
|---|---|---|
| V1.0 | 2019/03/29 | 初次发行 |
| V1.1 | 2019/07/09 | 修订表 2，更新管脚说明，删除测试管脚，PGC2400L 变更为 PGC2KL |
| V1.2 | 2019/08/21 | 修订表 2，更新用户 IO 的状态描述，更新 MIPI_CTRL 的说明 |
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## 名词术语解释

POD：　Package Outline Drawing

FCCSP：　Flip Chip Chip Scale Package

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# 一、 封装介绍

PGC2KL_SSBG256 产品采用倒装焊(FCCSP)封装形式。其封装尺寸为 9mmx9mm，植球数量为 256，植球间距为 0.5mm，最大封装厚度为 1.0mm。

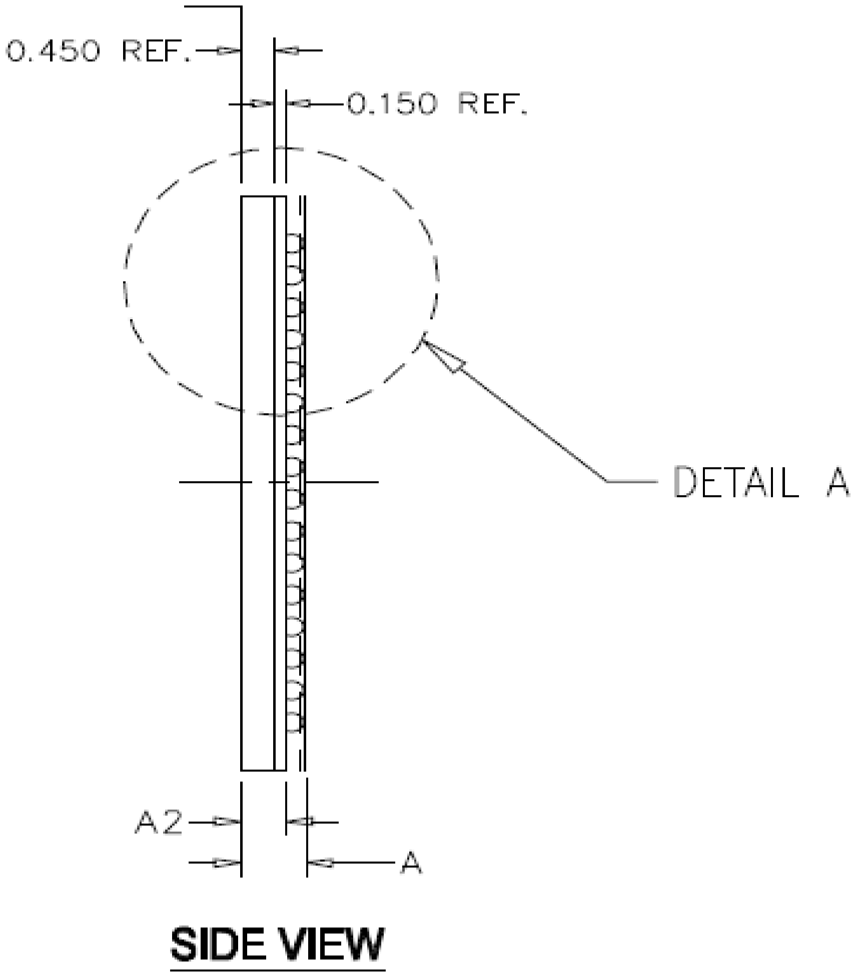
# 二、 封装尺寸和管脚

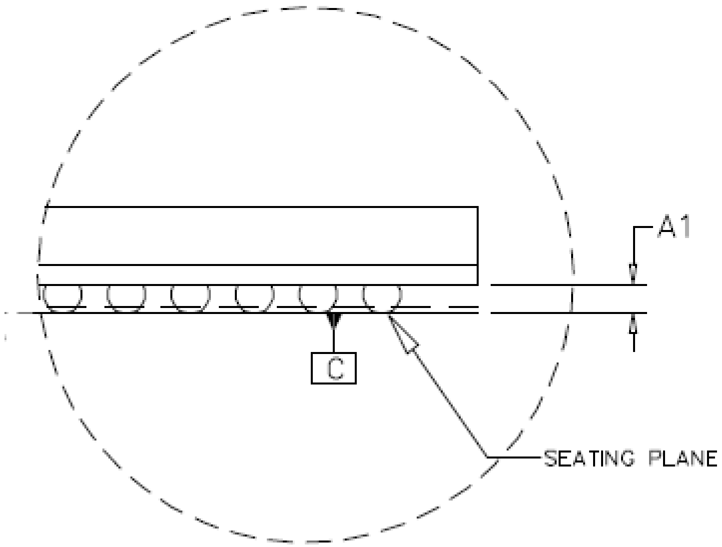
## （一） 封装外形尺寸

表 1 外形尺寸数值表

单位为毫米

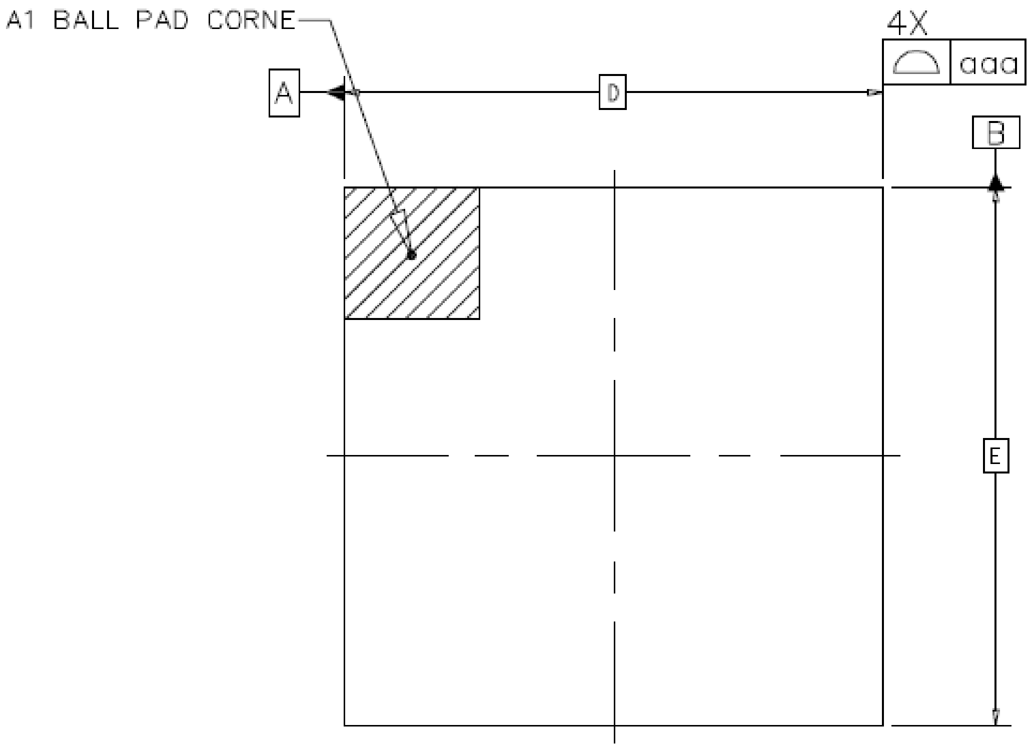
| 尺寸符号 | 数值 | | | 尺寸符号 | 数值 | | |
|---|---|---|---|---|---|---|---|
| | 最 小 | 典型值 | 最 大 | | 最 小 | 典型值 | 最 大 |
| A | N/A | N/A | 1.0 | D1 | N/A | 7.5 | N/A |
| A1 | 0.182 | 0.232 | 0.282 | E1 | N/A | 7.5 | N/A |
| A2 | 0.542 | 0.6 | 0.658 | s | N/A | 0.75 | N/A |
| D | N/A | 9.0 | N/A | b | 0.25 | 0.3 | 0.35 |
| E | N/A | 9.0 | N/A | e | N/A | 0.5 | N/A |






**DETAIL A**

ROTATED 90°




**TOP VIEW**

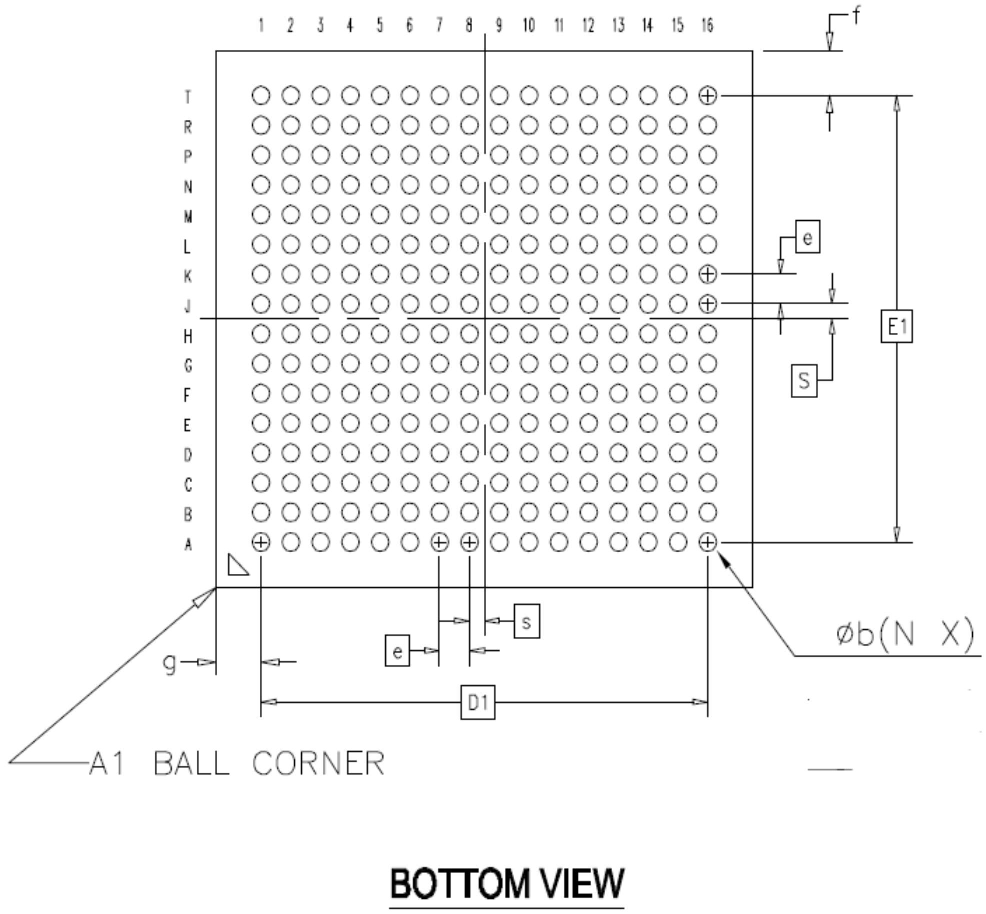

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
T R P N M L K J H G F E D C B A
f
e
E1
S
s
e
øb(N X)
g
D1
A1 BALL CORNER
BOTTOM VIEW

图 1 外形尺寸图(POD)

## （二） 管脚说明

PGC2KL_SSBG256 产品的 user IO 数为 207。

表 2 产品管脚定义

| 管脚名称 | 管脚类型 | 方向 | 管脚说明 |
| --- | --- | --- | --- |
| 用户 I/O 管脚 | | | |
| DIFF[I,IO]_XX_NN[P,N] | 专用管脚 | 输入/输出 | 普通用户 I/O。<br>（1）DIFFI，表示支持差分信号输入和伪差分输出；DIFFIO，表示支持差分信号输入和真差分输出，能够用于 LVDS 类型的信号发送和接收；<br>（2）“XX”，表示 Bank 序号，可取 B0，B1，B2，B3，B4，B5；<br>（3）“NN”，表示 Bank 内可编程 I/O 组的序号，从 0 开始递增；<br>（4）[P,N]:“P”表示差分对的正端，“N”表示差分对的负端；<br>上电复位期间，普通用户 I/O 为低电平；<br>完成上电复位但未配置时，普通用户 I/O 状态为下拉；<br>配置期间，普通用户 I/O 状态为下拉； |
| 配置 [1] | | | |
| INIT_FLAG_N | 复用管脚 | 双向（开漏） | 配置状态复用管脚，当做配置管脚时：<br>上电复位期间，为低电平；<br>完成上电复位但未配置时，为开漏，弱上拉；<br>在配置过程中，为开漏，弱上拉；<br>在初始化过程中，该管脚可以由外部输入低电平，用于指示错误或者延迟配置。在配置过程中，该管脚作为配置错误的指示状态输出，为低表示配置过程中出现错误； |
| CFG_DONE | 复用管脚 | 双向（开漏） | 配置状态复用管脚，内置弱上拉电阻，当做配置管脚时，作为配置完成指示状态输出，为高表示配置完成；<br>在配置之前或者配置过程中该管脚被驱动为低电平；在配置完成后，该管脚可以由外部继续驱动为低电平，一旦内部启动时序发现 CFG_DONE 为低电平，那么内部的启动电路继续保持直到 CFG_DONE 变为高电平才会继续执行启动过程； |
| RSTN | 复用管脚 | 输入 | 复用的复位管脚，内置弱上拉电阻，当做复位管脚时，用于重新启动配置流程，低有效；建议用户在使用过程中在芯片外部用电阻上拉 RSTN（内部弱上拉电阻的阻值一般为 |

| 管脚名称 | 管脚类型 | 方向 | 管脚说明 |
|---|---|---|---|
| | | | 20kOhms 以上，上拉强度较弱)；当该管脚为低电平，FPGA 进入复位状态，所有的 I/O 处于弱下拉； |
| CFG_CLK | 复用管脚 | 输入/输出 | 配置复用时钟管脚，内置弱上拉电阻，当做配置管脚时：<br>在从 SPI 配置模式，该管脚作为时钟输入以从外部获取配置数据；<br>在主 SPI 配置模式，该管脚作为时钟输出以从外部获取配置数据，在此模式，需外接 1kOhms 上拉电阻；<br>主 SPI 模式和从 SPI 模式允许同时可用，但是不允许同时用这两种模式访问； |
| TCK | 复用管脚 | 输入 | 复用 JTAG 测试时钟时钟输入管脚；需外接 4.7kOhms 的下拉电阻； |
| TMS | 复用管脚 | 输入 | 复用 JTAG 测试模式选择输入管脚；内置弱上拉电阻，上拉到 VCCIO0； |
| TDI | 复用管脚 | 输入 | 复用 JTAG 测试数据输入管脚；内置弱上拉电阻，上拉到 VCCIO0； |
| TDO | 复用管脚 | 输出 | 复用 JTAG 测试数据输出管脚。内置弱上拉电阻，上拉到 VCCIO0； |
| JTAGEN | 复用管脚 | 输入 | 可选的 JTAG 端口行为控制管脚，该功能只在用户模式下可用，即在配置模式下，该端口为用户 I/O，默认状态为弱下拉；<br>在用户模式下，<br>当 JTAG 管脚配置为配置 I/O 时，该端口为用户 I/O，状态由用户控制；<br>当 JTAG 管脚作为用户 I/O 时，JTAGEN 变成了专用输入，用来控制 JTAG 管脚是否可用；默认状态为弱下拉；<br>在 JTAGEN 为专用 I/O 的情况下：<br>（1）当为低电平，JTAG 管脚作为普通用户 I/O 功能；<br>（2）当为高电平，JTAG 管脚作为 JTAG 配置管脚的功能； |
| FCS_N | 复用管脚 | 输出 | 复用配置管脚，外部主 SPI 配置模式使用，<br>（1）主 SPI 模式下，低有效输出片选信号给外部 Flash；<br>（2）配置完成后，可以作为用户 I/O 使用； |
| MISO_SO | 复用管脚 | 输入/输出 | 复用 SPI 配置管脚；<br>（1）MISO，主 SPI 模式串行数据输入；<br>（2）SO，从 SPI 模式串行数据输出；<br>主 SPI 模式和从 SPI 模式允许同时可用， |

| 管脚名称 | 管脚类型 | 方向 | 管脚说明 |
|---|---|---|---|
| | | | 但是不允许同时用这两种模式访问； |
| MOSI_SI | 复用管脚 | 输入/输出 | 复用 SPI 配置管脚；<br>（1）MOSI，主 SPI 模式串行数据输出<br>（2）SI，从 SPI 模式串行数据输入；<br>主 SPI 模式和从 SPI 模式允许同时可用，但是不允许同时用这两种模式访问； |
| FCSI_N | 复用管脚 | 输入 | 复用 SPI 配置管脚，内置弱上拉电阻；<br>从 SPI 模式，低有效片选输入； |
| SCL | 复用管脚 | 输入（开漏） | 从 I2C 模式时钟输入；需要外接弱上拉电阻； |
| SDA | 复用管脚 | 输入/输出（开漏） | I2C 模式数据输入/输出；需要外接弱上拉电阻； |
| SPAL_CLK | 复用管脚 | 输入 | 从并 X16 配置方式的时钟输入； |
| SPAL_CS_N | 复用管脚 | 输入 | 从并 X16 配置方式的使能输入； |
| SPAL_RDWR_N | 复用管脚 | 输入 | 从并 X16 配置方式的读写控制输入；<br>1：读；0：写； |
| SPAL_BUSY | 复用管脚 | 输出 | 从并 X16 配置方式的忙碌指示位；<br>回读期间，如果数据没准备好，则 SPAL_BUSY 变高； |
| SPAL_D15~SPAL_D0 | 复用管脚 | 输入/输出 | 从并 X16 配置方式的数据总线； |
| 时钟，PLL | | | |
| CLK[0,1,2][P,N]_[B0,B1,…,B5] | 复用管脚 | 输入 | 专用全局时钟输入管脚；还可以作为普通用户 I/O 使用。每个 Bank 提供 0~3 个管脚；<br>（1）[0，1，2]：时钟管脚序号；<br>（2）[P,N]：时钟管脚互补差分的正端和负端；<br>（3）[B0,B1,…,B5]：Bank 序号； |
| PLL[0,1]_CLKIN_[P,N] | 复用管脚 | 输入 | 可选的 PLL 输入，PLL 可以选择从这些管脚直接输入时钟；其还可以作为普通用户 I/O 使用；<br>（1）[0,1]：对应 PLL0 和 PLL1；<br>（2）[P,N]：时钟管脚互补差分的正端和负端； |
| PLL[0,1]_CLKFB_[P,N] | 复用管脚 | 输入 | 可选的 PLL 反馈时钟输入，PLL 可以选择从这些管脚来外部反馈时钟；其还可以作为普通用户 I/O 使用；<br>（1）[0,1]：对应 PLL0 和 PLL1；<br>（2）[P,N]：时钟管脚互补差分的正和负端； |
| 电源 | | | |
| VCC | | 电源 | 外部供电电源，支持 1.2V，给内核逻辑提供电源； |

| 管脚名称 | 管脚类型 | 方向 | 管脚说明 |
|---|---|---|---|
| VCCIO[0,1,2,3,4,5] | | 电源 | I/O Bank 电源； |
| VSS | | 地 | 与 VCC 相关的地； |
| MIPI_CTRL | | | MIPI 高性能应用控制管脚，当它连接 2.5V 或 3.3V 时，器件支持高性能的 MIPI 发送功能；当它连接 VSS 或悬空时，器件不支持高性能的 MIPI 发送功能 |

注: 1. 配置的复用管脚当做用户 I/O 时，状态与用户 I/O 管脚相同

# 1. Pin Name list

表 3 Pin name list

| Bank Name | Ball name(Function name) | Ball Number | 差分对 | Time Delay(ps) |
|---|---|---|---|---|
| B0 | DIFFI_B0_0N/CFG_DONE | D5 | IO_1_N | 11.883 |
| B0 | DIFFI_B0_0P/INIT_FLAG_N | C4 | IO_1_P | 12.243 |
| B0 | DIFFIO_B0_1N/SPAL_CLK | B3 | IO_2_N | 18.401 |
| B0 | DIFFIO_B0_1P/SPAL_CS_N | A3 | IO_2_P | 19.513 |
| B0 | DIFFIO_B0_3N/SPAL_RDWR_N | B4 | IO_4_N | 19.257 |
| B0 | DIFFIO_B0_3P/SPAL_BUSY | A4 | IO_4_P | 18.428 |
| B0 | DIFFI_B0_4N/SPAL_D15 | E5 | IO_5_N | 9.036 |
| B0 | DIFFI_B0_4P/SPAL_D14 | E6 | IO_5_P | 8.475 |
| B0 | DIFFIO_B0_5N/SPAL_D13 | C5 | IO_6_N | 12.898 |
| B0 | DIFFIO_B0_5P/SPAL_D12 | D6 | IO_6_P | 12.39 |
| B0 | DIFFI_B0_6N/SPAL_D11 | B5 | IO_7_N | 17.553 |
| B0 | DIFFI_B0_6P/SPAL_D10 | A5 | IO_7_P | 16.643 |
| B0 | DIFFIO_B0_7N/SPAL_D9 | B6 | IO_8_N | 17.057 |
| B0 | DIFFIO_B0_7P/SPAL_D8 | A6 | IO_8_P | 17.163 |
| B0 | DIFFI_B0_8N/RSTN | C6 | IO_9_N | 11.983 |
| B0 | DIFFI_B0_8P/JTAGEN | C7 | IO_9_P | 12.055 |
| B0 | DIFFIO_B0_9N/SPAL_D7 | E7 | IO_10_N | 7.616 |
| B0 | DIFFIO_B0_9P/SPAL_D6 | D7 | IO_10_P | 7 |
| B0 | DIFFI_B0_10N/SPAL_D5 | A7 | IO_11_N | 15.198 |
| B0 | DIFFI_B0_10P/SPAL_D4 | B7 | IO_11_P | 16.197 |
| B0 | DIFFIO_B0_11N/SPAL_D3 | E8 | IO_12_N | 6.363 |
| B0 | DIFFIO_B0_11P/SPAL_D2 | D8 | IO_12_P | 6.68 |
| B0 | DIFFI_B0_12N/SDA/CLK0N_B0 | B8 | IO_13_N | 15.308 |
| B0 | DIFFI_B0_12P/SCL/CLK0P_B0 | A8 | IO_13_P | 14.79 |
| B0 | DIFFIO_B0_13N/SPAL_D1 | C8 | IO_14_N | 9.492 |
| B0 | DIFFIO_B0_13P/SPAL_D0 | C9 | IO_14_P | 9.373 |
| B0 | DIFFI_B0_14N | D9 | IO_15_N | 6.127 |
| B0 | DIFFI_B0_14P | E9 | IO_15_P | 5.904 |
| B0 | DIFFIO_B0_15N/CLK1N_B0 | A9 | IO_16_N | 15.978 |

| | | | | |
|---|---|---|---|---|
| B0 | DIFFIO_B0_15P/CLK1P_B0 | B9 | IO_16_P | 16.98 |
| B0 | DIFFI_B0_16N/TMS | C11 | IO_17_N | 15.433 |
| B0 | DIFFI_B0_16P/TCK | C10 | IO_17_P | 15.234 |
| B0 | DIFFIO_B0_17N | A10 | IO_18_N | 19.66 |
| B0 | DIFFIO_B0_17P | B10 | IO_18_P | 19.763 |
| B0 | DIFFI_B0_18N | B11 | IO_19_N | 18.798 |
| B0 | DIFFI_B0_18P | A11 | IO_19_P | 19.551 |
| B0 | DIFFIO_B0_19N | A12 | IO_20_N | 19.071 |
| B0 | DIFFIO_B0_19P | B12 | IO_20_P | 19.821 |
| B0 | DIFFI_B0_20N/TDI | C12 | IO_21_N | 13.657 |
| B0 | DIFFI_B0_20P/TDO | D11 | IO_21_P | 13.415 |
| B0 | DIFFIO_B0_21N | D10 | IO_22_N | 9.857 |
| B0 | DIFFIO_B0_21P | E10 | IO_22_P | 10.003 |
| B0 | DIFFI_B0_22N | D12 | IO_23_N | 13.901 |
| B0 | DIFFI_B0_22P | C13 | IO_23_P | 13.474 |
| B0 | DIFFIO_B0_23N | B13 | IO_24_N | 21.187 |
| B0 | DIFFIO_B0_23P | A13 | IO_24_P | 21.019 |
| B0 | DIFFIO_B0_25N | E11 | IO_26_N | 5.24 |
| B0 | DIFFIO_B0_25P | E12 | IO_26_P | 5.544 |
| B0 | DIFFI_B0_26P | A15 | IO_27_P | 21.227 |
| B0 | DIFFIO_B0_27N | B14 | IO_28_N | 20.259 |
| B0 | DIFFIO_B0_27P | A14 | IO_28_P | 19.575 |
| B1 | DIFFI_B1_0P | A2 | IO_29_P | 18.518 |
| B1 | DIFFI_B1_0N | B2 | IO_29_N | 20.202 |
| B1 | DIFFI_B1_1P | D4 | IO_30_P | 11.031 |
| B1 | DIFFI_B1_1N | E4 | IO_30_N | 10.234 |
| B1 | DIFFI_B1_2P | B1 | IO_31_P | 23.209 |
| B1 | DIFFI_B1_2N | C2 | IO_31_N | 22.449 |
| B1 | DIFFI_B1_3P | D3 | IO_32_P | 16.152 |
| B1 | DIFFI_B1_3N | C3 | IO_32_N | 15.664 |
| B1 | DIFFI_B1_4P | D2 | IO_33_P | 22.446 |
| B1 | DIFFI_B1_4N | C1 | IO_33_N | 21.799 |
| B1 | DIFFI_B1_5P | F4 | IO_34_P | 6.313 |

| | | | | |
|---|---|---|---|---|
| B1 | DIFFI_B1_5N | G5 | IO_34_N | 6.352 |
| B1 | DIFFI_B1_6P | D1 | IO_35_P | 20.799 |
| B1 | DIFFI_B1_6N | E2 | IO_35_N | 20.972 |
| B1 | DIFFI_B1_7P | F3 | IO_36_P | 16.628 |
| B1 | DIFFI_B1_7N | E3 | IO_36_N | 15.873 |
| B1 | DIFFI_B1_8P | G4 | IO_37_P | 10.962 |
| B1 | DIFFI_B1_8N | G3 | IO_37_N | 10.193 |
| B1 | DIFFI_B1_9P | E1 | IO_38_P | 21.013 |
| B1 | DIFFI_B1_9N | F2 | IO_38_N | 20.485 |
| B1 | DIFFI_B1_10P | G2 | IO_39_P | 18.642 |
| B1 | DIFFI_B1_10N | F1 | IO_39_N | 18.199 |
| B1 | DIFFI_B1_11P | H4 | IO_40_P | 9.5 |
| B1 | DIFFI_B1_11N | H3 | IO_40_N | 8.769 |
| B1 | DIFFI_B1_12P/CLKOP_B1 | H2 | IO_41_P | 17.388 |
| B1 | DIFFI_B1_12N/CLKON_B1 | G1 | IO_41_N | 17.276 |
| B1 | DIFFI_B1_13P | H1 | IO_42_P | 16.193 |
| B1 | DIFFI_B1_13N | J2 | IO_42_N | 16.6 |
| B1 | DIFFI_B1_14P | J1 | IO_43_P | 17.689 |
| B1 | DIFFI_B1_14N | K1 | IO_43_N | 17.201 |
| B1 | DIFFI_B1_15P | J4 | IO_44_P | 9.698 |
| B1 | DIFFI_B1_15N | J3 | IO_44_N | 9.551 |
| B1 | DIFFI_B1_16P | K2 | IO_45_P | 16.674 |
| B1 | DIFFI_B1_16N | L1 | IO_45_N | 16.776 |
| B1 | DIFFI_B1_17P | L2 | IO_46_P | 15.337 |
| B1 | DIFFI_B1_17N | K3 | IO_46_N | 15.71 |
| B1 | DIFFI_B1_18P | M1 | IO_47_P | 18.591 |
| B1 | DIFFI_B1_18N | M2 | IO_47_N | 18.062 |
| B1 | DIFFI_B1_19P | K4 | IO_48_P | 7.47 |
| B1 | DIFFI_B1_19N | L5 | IO_48_N | 8.003 |
| B1 | DIFFI_B1_20P | N1 | IO_49_P | 21.444 |
| B1 | DIFFI_B1_20N | P1 | IO_49_N | 21.183 |
| B1 | DIFFI_B1_21P | L3 | IO_50_P | 11.208 |
| B1 | DIFFI_B1_21N | L4 | IO_50_N | 11.528 |

| | | | | |
|---|---|---|---|---|
| B1 | DIFFI_B1_22P | M3 | IO_51_P | 15.683 |
| B1 | DIFFI_B1_22N | N2 | IO_51_N | 15.399 |
| B1 | DIFFI_B1_23P | R1 | IO_52_P | 21.68 |
| B1 | DIFFI_B1_23N | P2 | IO_52_N | 21.892 |
| B1 | DIFFI_B1_24P | N3 | IO_53_P | 14.112 |
| B1 | DIFFI_B1_24N | M4 | IO_53_N | 14.267 |
| B1 | DIFFI_B1_25P | P3 | IO_54_P | 12.921 |
| B1 | DIFFI_B1_25N | N4 | IO_54_N | 12.662 |
| B2 | DIFFI_B2_0N | P4 | IO_55_N | 11.937 |
| B2 | DIFFI_B2_0P | P5 | IO_55_P | 11.943 |
| B2 | DIFFI_B2_1N/MOSI_SI | N5 | IO_56_N | 7.54 |
| B2 | DIFFI_B2_1P/FCSI_N | M5 | IO_56_P | 7.9 |
| B2 | DIFFI_B2_3N | T2 | IO_58_N | 21.714 |
| B2 | DIFFI_B2_3P | R2 | IO_58_P | 21.912 |
| B2 | DIFFI_B2_4N | T3 | IO_59_N | 19.743 |
| B2 | DIFFI_B2_4P | R3 | IO_59_P | 20.271 |
| B2 | DIFFI_B2_5N | N6 | IO_60_N | 9.522 |
| B2 | DIFFI_B2_5P | M6 | IO_60_P | 9.655 |
| B2 | DIFFI_B2_6N | R4 | IO_61_N | 18.89 |
| B2 | DIFFI_B2_6P | T4 | IO_61_P | 19.444 |
| B2 | DIFFI_B2_7N | M7 | IO_62_N | 8.283 |
| B2 | DIFFI_B2_7P | N7 | IO_62_P | 8.409 |
| B2 | DIFFI_B2_8N | P6 | IO_63_N | 11.182 |
| B2 | DIFFI_B2_8P | P7 | IO_63_P | 10.833 |
| B2 | DIFFI_B2_9N | R5 | IO_64_N | 19.761 |
| B2 | DIFFI_B2_9P | T5 | IO_64_P | 20.169 |
| B2 | DIFFI_B2_10N | R6 | IO_65_N | 17.202 |
| B2 | DIFFI_B2_10P | T6 | IO_65_P | 17.536 |
| B2 | DIFFI_B2_11N | M8 | IO_66_N | 9.78 |
| B2 | DIFFI_B2_11P | N8 | IO_66_P | 10.02 |
| B2 | DIFFI_B2_12N | T8 | IO_67_N | 18.982 |
| B2 | DIFFI_B2_12P | R8 | IO_67_P | 17.746 |
| B2 | DIFFI_B2_13N/CLK1N_B2 | R7 | IO_68_N | 15.813 |

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|---|---|---|---|---|
| B2 | DIFFI_B2_13P/CLK1P_B2 | T7 | IO_68_P | 16.774 |
| B2 | DIFFI_B2_14N | P8 | IO_69_N | 11.417 |
| B2 | DIFFI_B2_14P | P9 | IO_69_P | 11.148 |
| B2 | DIFFI_B2_15N | M9 | IO_70_N | 8.234 |
| B2 | DIFFI_B2_15P | N9 | IO_70_P | 7.249 |
| B2 | DIFFI_B2_16N | T10 | IO_71_N | 19.034 |
| B2 | DIFFI_B2_16P | T11 | IO_71_P | 18.462 |
| B2 | DIFFI_B2_17N/CLK0N_B2 | R9 | IO_72_N | 15.406 |
| B2 | DIFFI_B2_17P/CLK0P_B2 | T9 | IO_72_P | 15.933 |
| B2 | DIFFI_B2_18N | R10 | IO_73_N | 12.68 |
| B2 | DIFFI_B2_18P | P10 | IO_73_P | 12.295 |
| B2 | DIFFI_B2_19N | M10 | IO_74_N | 8.09 |
| B2 | DIFFI_B2_19P | N10 | IO_74_P | 7.097 |
| B2 | DIFFI_B2_20N | P11 | IO_75_N | 15.75 |
| B2 | DIFFI_B2_20P | R12 | IO_75_P | 15.974 |
| B2 | DIFFI_B2_21N/MISO_SO | R11 | IO_76_N | 18.783 |
| B2 | DIFFI_B2_21P/CFG_CLK | T12 | IO_76_P | 18.829 |
| B2 | DIFFI_B2_22N | R13 | IO_77_N | 17.602 |
| B2 | DIFFI_B2_22P | P12 | IO_77_P | 16.068 |
| B2 | DIFFI_B2_23N | N11 | IO_78_N | 9.895 |
| B2 | DIFFI_B2_23P | M11 | IO_78_P | 9.461 |
| B2 | DIFFI_B2_25N | T14 | IO_80_N | 20.591 |
| B2 | DIFFI_B2_25P/FCS_N | T13 | IO_80_P | 20.47 |
| B2 | DIFFI_B2_26N | M12 | IO_81_N | 9.901 |
| B2 | DIFFI_B2_26P | N12 | IO_81_P | 9.908 |
| B2 | DIFFI_B2_27N | R14 | IO_82_N | 16.643 |
| B2 | DIFFI_B2_27P | P13 | IO_82_P | 17.857 |
| B3 | DIFFI_B3_0P | N16 | IO_83_P | 19.85 |
| B3 | DIFFI_B3_0N | M15 | IO_83_N | 19.385 |
| B3 | DIFFI_B3_1P | K13 | IO_84_P | 12.082 |
| B3 | DIFFI_B3_1N | L14 | IO_84_N | 11.748 |
| B3 | DIFFI_B3_2P/CLK0P_B3 | P16 | IO_85_P | 20.337 |
| B3 | DIFFI_B3_2N/CLK0N_B3 | N15 | IO_85_N | 20.355 |

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|---|---|---|---|---|
| B3 | DIFFI_B3_3P | M14 | IO_86_P | 10.994 |
| B3 | DIFFI_B3_3N | L13 | IO_86_N | 11.114 |
| B3 | DIFFI_B3_4P | R15 | IO_87_P | 23.02 |
| B3 | DIFFI_B3_4N | T15 | IO_87_N | 22.595 |
| B3 | DIFFI_B3_5P | P15 | IO_88_P | 21.817 |
| B3 | DIFFI_B3_5N | R16 | IO_88_N | 22.151 |
| B3 | DIFFI_B3_6P | M13 | IO_89_P | 10.723 |
| B3 | DIFFI_B3_6N | N13 | IO_89_N | 10.114 |
| B3 | DIFFI_B3_7P | N14 | IO_90_P | 15.144 |
| B3 | DIFFI_B3_7N | P14 | IO_90_N | 14.277 |
| B4 | DIFFI_B4_0P | G15 | IO_91_P | 17.404 |
| B4 | DIFFI_B4_0N | G16 | IO_91_N | 17.332 |
| B4 | DIFFI_B4_1P | H13 | IO_92_P | 9.086 |
| B4 | DIFFI_B4_1N | H14 | IO_92_N | 9.009 |
| B4 | DIFFI_B4_2P | H15 | IO_93_P | 15.234 |
| B4 | DIFFI_B4_2N | H16 | IO_93_N | 14.666 |
| B4 | DIFFI_B4_3P/CLK0P_B4 | J16 | IO_94_P | 15.77 |
| B4 | DIFFI_B4_3N/CLK0N_B4 | J15 | IO_94_N | 14.81 |
| B4 | DIFFI_B4_4P | K16 | IO_95_P | 17.65 |
| B4 | DIFFI_B4_4N | K15 | IO_95_N | 17.401 |
| B4 | DIFFI_B4_5P | J13 | IO_96_P | 9.051 |
| B4 | DIFFI_B4_5N | J14 | IO_96_N | 9.453 |
| B4 | DIFFI_B4_6P | M16 | IO_97_P | 20.92 |
| B4 | DIFFI_B4_6N | L15 | IO_97_N | 20.901 |
| B4 | DIFFI_B4_7P | L16 | IO_98_P | 17.676 |
| B4 | DIFFI_B4_7N | K14 | IO_98_N | 17.225 |
| B5 | DIFFI_B5_0P/PLL0_CLKFB_P | B15 | IO_99_P | 21.896 |
| B5 | DIFFI_B5_0N/PLL0_CLKFB_N | B16 | IO_99_N | 21.296 |
| B5 | DIFFI_B5_1P | D13 | IO_100_P | 15.191 |
| B5 | DIFFI_B5_1N | C14 | IO_100_N | 15.221 |
| B5 | DIFFI_B5_2P/PLL0_CLKIN_P | C15 | IO_101_P | 20.904 |
| B5 | DIFFI_B5_2N/PLL0_CLKIN_N | C16 | IO_101_N | 20.555 |
| B5 | DIFFI_B5_3P | D14 | IO_102_P | 14.579 |

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| B5 | DIFFI_B5_3N | E13 | IO_102_N | 14.513 |
| B5 | DIFFI_B5_4P/CLK0P_B5 | D15 | IO_103_P | 18.711 |
| B5 | DIFFI_B5_4N/CLK0N_B5 | D16 | IO_103_N | 17.907 |
| B5 | DIFFI_B5_5P | F13 | IO_104_P | 9.214 |
| B5 | DIFFI_B5_5N | F12 | IO_104_N | 9.733 |
| B5 | DIFFI_B5_6P | G13 | IO_105_P | 10.298 |
| B5 | DIFFI_B5_6N | G14 | IO_105_N | 10.16 |
| B5 | DIFFI_B5_7P | E15 | IO_106_P | 16.581 |
| B5 | DIFFI_B5_7N | E14 | IO_106_N | 16.704 |
| B5 | DIFFI_B5_8P | F14 | IO_107_P | 16.157 |
| B5 | DIFFI_B5_8N | F15 | IO_107_N | 16.353 |
| B5 | DIFFI_B5_9P | E16 | IO_108_P | 19.514 |
| B5 | DIFFI_B5_9N | F16 | IO_108_N | 19.264 |
| | VCC | H7 | | |
| | VCC | H8 | | |
| | VCC | H9 | | |
| | VCC | H10 | | |
| | VCC | J7 | | |
| | VCC | J8 | | |
| | VCC | J9 | | |
| | VCC | J10 | | |
| | MIPI_CTRL | F10 | | 8.824 |
| B0 | VCCIO0 | F6 | | |
| B0 | VCCIO0 | F7 | | |
| B0 | VCCIO0 | F8 | | |
| B0 | VCCIO0 | F9 | | |
| B1 | VCCIO1 | G6 | | |
| B1 | VCCIO1 | H5 | | |
| B1 | VCCIO1 | J5 | | |
| B2 | VCCIO2 | L7 | | |
| B2 | VCCIO2 | L8 | | |
| B2 | VCCIO2 | L9 | | |
| B2 | VCCIO2 | L10 | | |

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|---|---|---|---|---|
| B3 | VCCIO3 | L11 | | |
| B3 | VCCIO3 | L12 | | |
| B4 | VCCIO4 | H12 | | |
| B4 | VCCIO4 | J12 | | |
| B2 | VCCIO5 | F11 | | |
| B2 | VCCIO5 | G12 | | |
| | VSS | A1 | | |
| | VSS | A16 | | |
| | VSS | F5 | | |
| | VSS | G7 | | |
| | VSS | G8 | | |
| | VSS | G9 | | |
| | VSS | G10 | | |
| | VSS | G11 | | |
| | VSS | H6 | | |
| | VSS | H11 | | |
| | VSS | J6 | | |
| | VSS | J11 | | |
| | VSS | K5 | | |
| | VSS | K6 | | |
| | VSS | K7 | | |
| | VSS | K8 | | |
| | VSS | K9 | | |
| | VSS | K10 | | |
| | VSS | K11 | | |
| | VSS | K12 | | |
| | VSS | L6 | | |
| | VSS | T1 | | |
| | VSS | T16 | | |